CLAIMS

1. Starting circuit (13) for switching power supplies having a first supply voltage (Vin) coming from a first terminal and a second supply voltage (Vcc) coming from a second terminal and a third terminal (30); said starting circuit comprising: a first current path between said first terminal and said third terminal (30); a second current path between said third terminal (30) and said second terminal; a third current path between said second terminal and said third terminal (30), characterized by further comprising a two-way voltage regulator (M3, Dz2, R5, R6) placed between said second terminal and said third terminal (30), able to supply said first supply voltage (Vin) to said second terminal through said first and second current path at the switching on of said switching power supply and to supply said second supply voltage (Vcc) to said third terminal (30) through said third current path when said second supply voltage (Vcc) is increased.

2. Starting circuit for switching power supplies according to claim 1, characterized in that said two-way voltage regulator (M3, Dz2, R5, R6) comprises a voltage limiting circuit (R5, R6, Dz2) so that said second supply voltage (Vcc) supplied to said third terminal (30) is limited to a prefixed voltage.

3. Starting circuit for switching power supplies according to claim 1, characterized in that said two-way voltage regulator (M3, Dz2, R5, R6) comprises a transistor (M3) having the drain coupled to said second terminal and the source coupled to said first and to said third terminal (30).

4. Starting circuit for switching power supplies according to claim 3, characterized in that said two-way voltage regulator (M3, Dz2, R5, R6) comprises a preset voltage generator (R5, R6, Dz2) coupled to said transistor (M3) gate.

5. Starting circuit for switching power supplies according to claim 3, characterized in that said two-way voltage regulator (M3, Dz2, R5, R6) comprises a capacitor (Cf) coupled to said transistor (M3) gate.

6. Starting circuit for switching power supplies according to claim 1, characterized in that said first current path comprises a resistance (Rs).

7. Starting circuit for switching power supplies according to claim 1, characterized in that said first current path comprises a controlled switch (S).

8. Starting circuit for switching power supplies according to claim 1, characterized in that said controlled switch (S) is closed when said second supply voltage (Vcc) is lower than a preset reference voltage value and it is open when said second supply voltage (VCC) is higher than said preset reference value.

9. Switching power supply comprising a control circuit (11) of said switching power supply; and a starting circuit (13) of said control circuit according to claim 1.

10. Integrated circuit of a switching power supply comprising a control circuit of said switching power supply; and a starting circuit (13) according to claim 1 able to sustain said second supply voltage (Vcc) greater than 40 V, more preferably greater than 80 V, and preferably even greater than 160 V.